I. Amendments to the Claims

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for transmitting data to a receiver over a data link in frames whose data-carrying capacity may vary from frame to frame, the method comprising:

transmitting the data in implicitly sequentially numbered blocks transmitted in at least one series of blocks, ~~each series having at least one block,~~ the blocks having lengths determined so that the receiver (i) can identify the blocks by sequence number using the sequence number of the first block of each series of blocks and (ii) can individually request retransmission of a lost or corrupted block, wherein:

the sequentially numbered blocks of a series each have a fixed length, except for the last block of a series;

the total number of sequence numbers available for numbering the blocks is pre-selected so that the bandwidth-delay product of the data link under ideal conditions divided by the total number of sequence numbers available for numbering the blocks is not greater than the lowest data-carrying capacity that is reasonably likely to be available in a frame to transmit a series of blocks over the data link during normal operation of the data link; and

the fixed length is initially set to be (i) greater than the bandwidth-delay product of the data link during normal operation of the data link divided by the total number of sequence numbers available for numbering the blocks, and (ii) less than the maximum data-carrying capacity that is likely to be available in a frame to transmit a series of blocks over the data link during normal operation of the data link, and

wherein the fixed length is reset if the bandwidth-delay product of the data link changes so that the fixed length is within (i) a predetermined tolerance of the bandwidth-delay product of the data link divided by the total number of sequence numbers available for numbering the blocks, or (ii) the maximum data-carrying capacity that is available in a frame to transmit a series of blocks over the data link.

Claims 2 - 4 (Cancelled).

5. (Currently Amended) The method of ~~claim 2~~ claim 1, wherein a series of blocks is encapsulated in a protocol unit together with a header that includes the sequence number of the first block of the series of blocks.

6. (Currently Amended) A method for transmitting data to a receiver over a data link in frames whose data-carrying capacity may vary from frame to frame, the method comprising:

when data-carrying capacity is made available in a frame, transmitting the data in one or more protocol units, each discrete protocol unit having a data payload portion that is implicitly divided into sequentially numbered blocks each having a fixed

length, except that the last block, or the only block if the protocol unit has only one block, is shorter if the data payload portion is not an integer multiple in length of the fixed length, and a header portion including the sequence number of the first block in the data payload portion, wherein the sequence numbers are chosen so that all blocks transmitted over the data link can be identified by sequence number by the receiver, wherein:

the total number of sequence numbers available for numbering the blocks is pre-selected so that the bandwidth-delay product of the data link under ideal conditions divided by the total number of sequence numbers available for numbering the blocks is not greater than the lowest data-carrying capacity that is reasonably likely to be available in a frame to transmit a protocol unit having only one block over the data link during normal operation of the data link; and

the fixed length is initially set to be (i) greater than the bandwidth-delay product of the data link under during normal operation of the data link divided by the total number of sequence numbers available for numbering the blocks, and (ii) less than the maximum data-carrying capacity that is likely to be available in a frame to transmit a protocol unit having only one block over the data link during normal operation of the data link, and

wherein the fixed length is reset if the bandwidth-delay product of the data link changes so that the fixed length is within (i) a predetermined tolerance of the bandwidth-delay product of the data link divided by the total number of sequence numbers available for numbering the blocks or (ii) the maximum data-carrying capacity that is available in a frame to transmit a protocol unit having only one block over the data link.

Claims 7 - 16 (Cancelled).

17. (Currently Amended) The method of ~~claim 8~~ claim 6, wherein, if it is determined that the receiver did not receive an uncorrupted copy of a previously transmitted protocol unit and there is sufficient data-carrying capacity in the next available frame to be transmitted, then retransmitting the previously transmitted protocol unit in the next available frame before transmitting data that has not been previously transmitted.

Claim 18 (Cancelled).

19. (Currently Amended) The method of ~~claim 8~~ claim 6, wherein, if it is determined that the receiver did not receive an uncorrupted copy of a previously transmitted protocol unit and there is sufficient data-carrying capacity in the next available frame to be transmitted, then:

forming a new protocol unit from consecutive blocks of the previously transmitted protocol unit and all consecutive previously transmitted protocol units that are to be retransmitted, starting with the first block of the previously transmitted protocol unit and proceeding sequentially through the previously transmitted protocol units or units adding blocks to the newly formed protocol unit until the data-carrying capacity of the next available frame is used or a block is encountered that is not the fixed length or is larger than the remaining available data-carrying capacity,

transmitting the newly formed protocol unit in the next available frame over the data link, and in the same manner, forming and transmitting further new protocol units whenever data-carrying capacity in a frame is available until all blocks of the previously transmitted protocol unit or units have been successfully retransmitted, each newly formed protocol unit having a header including the sequence number of the first block in its data payload portion.

20. (New) A method for transmitting a quantity of data to a receiver over a data link in frames whose data-carrying capacity may vary from frame to frame, the method comprising:

transmitting the quantity of data in consecutively numbered blocks in frames each having at least one protocol unit, each protocol unit having (i) a data payload portion in which at least one of the blocks is encapsulated and (ii) a header that includes the sequence number of the first block in the data payload portion, the blocks all having the same standard length, except for the last block of a payload portion or the only block of a payload portion that has only one block, either of which may be shorter if the length of the data transmitted in the payload portion is not an integer multiple of the standard block length, the blocks arranged so that the receiver can identify the blocks of a data payload portion by sequence number using the sequence number of the first block of a data payload portion without the sequence numbers of the blocks being explicitly transmitted in the protocol units, wherein:

if it is determined that the receiver did not receive an uncorrupted copy of a previously transmitted protocol unit and if there is sufficient data-carrying capacity in

the next available frame to be transmitted to retransmit the previously transmitted protocol unit, then retransmitting the entire previously transmitted protocol unit in the next available frame before transmitting data that has not been previously transmitted, but if there is not sufficient data-carrying capacity in the next available frame to be transmitted to transmit the entire previously transmitted protocol unit, then:

(i) forming a new protocol unit from consecutive blocks of the previously transmitted protocol unit and any other consecutive previously transmitted protocol units that are to be retransmitted, starting with the first block of the first previously transmitted protocol unit that is to be retransmitted and proceeding sequentially through each consecutive previously transmitted protocol unit or units to be retransmitted adding blocks to the newly formed protocol unit until (i) the data-carrying capacity of the next available frame is used, (ii) a block is encountered that is not the standard block length, in which case the block that is not the standard block length is added to newly formed protocol unit, or (iii) a block is encountered that is larger than the remaining available data-carrying capacity;

(ii) transmitting the newly formed protocol unit in the next available frame over the data link; and

(iii) in the same manner, forming and transmitting further new protocol units whenever data-carrying capacity in a frame is available until all blocks of the consecutive previously transmitted protocol unit and any consecutive protocol units to be retransmitted have been successfully retransmitted, each newly formed protocol unit having a header including the sequence number of the first block in its data payload portion; and wherein:

the total number of sequence numbers available for numbering the blocks is pre-selected so that the bandwidth-delay product of the data link under ideal conditions divided by the total number of sequence numbers available for numbering the blocks is not greater than the lowest data-carrying capacity that is reasonably likely to be available in a frame to transmit a protocol unit having only one block over the data link during normal operation of the data link; and

the fixed length is initially set to be greater than the bandwidth-delay product of the data link under during normal operation of the data link divided by the total number of sequence numbers available for numbering the blocks and less than the maximum data-carrying capacity that is reasonably likely to be available in a frame to transmit a protocol unit having only one block over the data link during normal operation of the data link and is reset if the bandwidth-delay product of the data link changes so that the fixed length is within a predetermined tolerance of the bandwidth-delay product of the data link divided by the total number of sequence numbers available for numbering the blocks or the maximum data-carrying capacity that is available in a frame to transmit a protocol unit having only one block over the data link.